UTAH GYPSY MOTH ERADICATION PROGRAM

1991 GYPSY MOTH PROJECT REPORT

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This was the third year that aerial treatment was required to reduce gypsy moth populations in Northern Utah. In 1988, two viable gypsy moth populations were found in a residential area of Salt Lake City. As a result, 1,198 acres were treated in 1989 with three aerial applications of Bacillus thuringensis (Bt). There was a 95% & 98% reduction in larval and eggmass counts respectively. An intensive trapping program was initiated in 1989 along the Wasatch Front to further delimit and locate gypsy moth populations. As a result of the expanded trapping, new moth populations were located and 13 blocks, encompassing 20,064 acres, were treated in 1990. There was a 90% reduction in male moth catches with the treatment blocks. The trapping effort was expanded in 1990 which resulted in additional male moth captures in previously untrapped areas. The treatment areas for 1991 consisted of 14 spray blocks, in five counties, encompassing 29,925 acres.

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No egg masses have been found since the 1989 fall egg mass survey in the Mt. Olympus Cove area. All the 1991 block boundaries were based on male moths captured during the 1990 flight period. Multiple catches and/or clusters of traps with single catches were placed within 1991 treatment block boundaries. Isolated single catches were often not included in spray block boundaries.

Aerial applications of Bt were applied over the 29,925 acres in 1991. Each spray block (Table 1) was treated three times at 5 day intervals. Aerial application was made using three rotary wing aircraft, one Hughes 500 and two Bell 206 B3's. All aircraft were equipped with four electronic rotary atomizer Beecomist nozzles calibrated to deliver 64 oz. per acre. Foray 48B at 24 BIU's was applied neet for all applications. Application costs, which includes the cost of the Bt and aerial application was $8.80 per acre. Total project costs are approximately $1.7 million, based on 89,775 acres treated, representing $18.94 per acre.

Mass trapping was conducted within residential sections of each spray block. Approximately 1844 traps were placed within these residential sites. Preliminary estimates of the cost of trap placement and retrieval for mass trapping is $5.00 per trap.

Detection trapping was conducted by APHIS personnel, using detection trapping guidelines developed by APHIS. There were 778 detection traps placed throughout the state, with approximately 400 of these deployed east of the delimitation trapping area along the Wasatch Front. Preliminary male moth catch results show one male moth captured in Alpine, Utah.

Approximately 5400 traps were placed in the delimitation survey area along the Wasatch Front. Of these, 2,500 traps were placed on Forest Service land in mountainous terrain. This represents a 35 percent increase in trap numbers compared to the 1989 survey. Only 4 percent of the traps placed in the mountains were listed as missing in 1991, compared to 30 and 5 percent trap losses in 1989 and 1990. In 1991, 192 moths were caught in the delimitation and detection traps. Of these, 164 moths were captured outside of the treatment blocks. Most of these catches are due to additional traps placed in areas where no traps had been placed previously. Within the treatment blocks only 28 moths were captured compared to pretreatment catches of 514 in 1990 (Table 2). In the 1990 treatment blocks male moth catches continued to decline, from 241 caught in 1990 to 63 in 1991 (Table 3). Although portions of the 1990 blocks were retreated in 1991 areas not retreated showed a decline or stayed at zero.

In 1991 a Move-In trapping program was initiated by APHIS. This program was developed to monitor sites where individuals have moved into Utah from generally infested states in the East. A telephone survey was undertaken to determine if a trap should be placed at the residential site. Traps were placed on residential sites if individuals transported outdoor articles from infested areas. Traps were not placed at sites where individuals moved into apartments with few of no outdoor articles. There were no moths caught in the 180 move-in traps.

Table 1. 1991 Spray Block Acreage

Block #	Non-Federal	Federal		Total Federal	Total Block
		Forest	Wilderness		
DA1	539	2950	0	2950	3489
DA2	1851	2842	0	2842	4693
SL1	217	989	0	989	1206
SL2	166	6	0	6	172
SL3	1640	440	0	440	2080
SL4	362	63	0	63	425
SL5	1788	1523	2677	4200	5988
SL6	233	14	375	389	622
SL7	72	0	0	0	72
SL8	806	572	741	1313	2119
SU1	507	0	0	0	507
UT1	2860	2479	0	2479	5339
UT2	1107	1205	0	1205	2312
UT3	90	811	0	811	901
TOTAL	12238	13894	3793	17687	29925

Table 2. Total Number of Male Moths Per Treatment Block.

Spray Block Area	1990	1991	Percent
DA1 - Parrish Creek	26	2	92
DA2 - Mueller Park	41	3	93
SL1 - Red Butte	7	0	100
SL2 - Burr Fork	4	0	100
SL3 - Alexander Creek	20	1	95
SL4 - Mt. Dell	8	0	100
SL5 - Millcreek	279	20	93
SL6 - Heughs Canyon	6	0	100
SL7 - Knudsens Corner	20	0	100
SL8 - Deaf Smith	46	1	98
SU1 - Big Bear Hollow	3	0	100
UT1 - Vivian Park	24	1	96
UT2 - Hope C-ground	24	0	100
UT3 - Squaw Peak	6	0	100
Total	514	28	95

Table 3. Total Number of Male Moths Per 1990 Treatment Blocks.

Spray Block Area	1989	1990	1991
SL1 - Millcreek	490	199	36
SL2 - Mt. Aire	6	0	1
SL3 - Lambs Canyon	9	0	4
SL4 - Hatch Canyon	10	0	0
SL5 - Little Mtn.	5	0	0
SL6 - Tolcat	9	3	0
SL7 - Lower Big Ctn.	7	0	0
SL8 - Upper Big Ctn.	6	0	0
SL9 - Top of the World	66	12	0
SL10 - Little Ctn.	20	3	0
SL11 - Bells Canyon	7	0	11
DA1 - Bountiful	703	15	6
UT1 - Provo	901	9	5
Total	2,239	241-89%	63-97%

Table 4. 1992 Spray Block Acreage

Block #	Block Name	Acres by Ownership		Total Acres/Block
		Federal	State/Private	
DA1	Ward Creek	493	770	1,263
SL1	Mill Creek	7,379	1,467	8,846
SL2	Parleys Canyon	508	555	1,063
SL3	Bells Canyon	809	451	1,260
UT1	North Fork	202	1,305	1,507
WA1	Sunday Canyon	8	1,771	1,779
TOTAL		9,399	6,319	15,718

FY 1991 Utah Gypsy Moth Program Synopsis

This year was the third year of the Utah Gypsy Moth Eradication Program. The Program included quarantine of infested areas; treatment with the biological insecticide, Bacillus thuringiensis, as well as delimitation trapping; and detection trapping. In 1991 the detection trapping was augmented to include additional trapping in areas where there were recent move-ins from the East.

In 1989, 1190 acres were treated. In 1990 and 1991, the acreages treated were 20,064 and 29,925, respectively. The increase in the acreages needing treatment was due to better detection capability. More pheromone traps were set out and they were set out in more difficult terrain. It appears that the populations have finally been well delimited and the acreage requiring treatment will probably decrease by 30-50% in 1992.

In 1990, moth catches were reduced from 2,239, in 1989, to 514. Of these, 245 moths were caught outside the treated areas. In 1991, 88 moths were caught. Of those caught, 58 were from within the treatment blocks and 30 outside the treatment blocks. No moths were caught around the homes of move-ins and only one moth was caught in the detection trapping program of APHIS, It was trapped in Alpine, Utah. That area will be monitored in 1992.

Annual surveys for sensitive species of non-target moths and butterflies are being conducted so mitigating measures may be taken if there are conflicts between treatments and sensitive species. There continues to be good public support for the Program.